



BWP AQ 08 Emission Control Plan (ECP) Instructions and Supporting Materials

Table of Contents

- introduction
- permit fact sheet
- completeness checklist
- DEP addresses and phone numbers
- application forms

Introduction

DEP *Permit Applications*, as well as *Instructions & Support Materials*, are available for download from the DEP Web site at mass.gov/dep in two file formats: Microsoft Word and Adobe Acrobat PDF. Either format allows documents to be printed.

Instructions & Support Materials files in Microsoft Word format contain a series of documents that provide guidance on how to prepare a permit application. Although we recommend that you print out the entire package, you may choose to print specific documents by selecting the appropriate page numbers for printing.

Permit Applications in Microsoft Word format must be downloaded separately. Users with Microsoft Word 97 or later may complete these forms electronically.

Permitting packages in Adobe Acrobat PDF format combine *Permit Applications* and *Instructions & Support Materials* in a single document. Adobe Acrobat PDF files may only be viewed and printed without alteration. *Permit Applications* in this format may not be completed electronically.



BWP AQ 08 Emission Control Plan (ECP) Permit Fact Sheet

1. What is the purpose of this permit?

An ECP is a plan that demonstrates how and when a facility will comply with Reasonably Available Control Technology (RACT) regulations for emissions of Volatile Organic Compounds (VOC) or Oxides of Nitrogen (NO_x).

Regulation 310 CMR 7.18(20) provides for an ECP for VOC emissions. Regulation 310 CMR 7.19(3) provides for an ECP for NO_x emissions.

The application material submitted to the DEP and the plan approval letter become the approved plan.

2. Who must apply?

In general, an ECP is required of VOC or NO_x sources for which a standard has been set in the regulations, or sources that have the potential to emit 50 tons or greater of the pollutant. For specific information on who must apply for an ECP for VOC emissions, refer to those sources regulated in 310 CMR 7.18. For NO_x emissions, refer to those sources regulated in 310 CMR 7.19.

3. What other requirements should be considered when applying for this permit?

None.

4. What are the application fees?

The application fee is \$1,530, where only DEP approval is required. The application fee is \$18,155, where approval by EPA as a single source State Implementation Plan (SIP) revision is required.

5. What is the Primary Permit Location? What is the Reserve Copy Location?

PRIMARY PERMIT LOCATION RESERVE COPY LOCATION

Department of Environmental Protection
_____* Regional Office
Air Quality Control

Department of Environmental Protection
_____* Regional Office
Air Quality Control

*See "DEP Addresses and Phone Numbers" page included in this package.

As indicated above, all completed application packages should be submitted in duplicate (one primary, one reserve copy) to the appropriate regional office for review and approval. Upon approval of the application, DEP stamps the photocopy and returns it to you for your records. In this manner, DEP and the applicant have identical copies of the approved submittal. You must use this form when filing for

BWP AQ 08: BWP AQ 08-A Emission Control Plan – NO_x emissions.
BWP AQ 08-B Emission Control Plan - VOC emissions.

In addition, this form is usually required when applying under BWP AQ 08-B:

BWP AQ SFP-1 Supplemental Form for Paint Spraying and Surface Coating.

Each form is included in this application kit. Additional supplemental forms may be necessary as circumstances dictate. Forms BWP AQ 08-A and BWP 08-B will indicate where such supplemental forms are necessary.



BWP AQ 08 Emission Control Plan (ECP) Permit Fact Sheet

6. What are the timelines?

As of July 1, 1993, the timelines are:

	AC	T1	T2*	PC
BWP AQ 08 - DEP approval only	30	90	90	45
BWP AQ 08 - DEP and EPA approval	30	160	160	90

*(A second technical review will only be conducted if necessary).

7. What is the annual compliance fee?

The amount of the annual compliance assurance fee depends upon the facility's potential emissions. Please consult Table 4.03 (Air Quality section) of 310 CMR 4.03 for more information. If you fail to pay the annual compliance assurance fee, your permit to operate could be suspended or revoked.

8. How long is this permit in effect?

The permit is in effect until the facility approved in this plan is substantially reconstructed or altered, at which time a new approval may be required.

9. How can I avoid the most common mistakes made in applying for this permit?

- Answer all questions on the application form and indicate "N/A" (not applicable) where appropriate.
- Be sure to have a legally responsible company official sign the application.
- Submit two copies of the application to the regional office (one of which must contain an original signature).
- Submit fee and one copy of the DEP Transmittal Form to:

Department of Environmental Protection,
P. O. Box 4062, Boston, MA 02211.

10. What are the regulations that apply to this permit? Where can I get copies?

These regulations include, but are not limited to:

- Air Quality Control Regulations, 310 CMR 6.00 - 8.00
- Timely Action and Fee Provisions, 310 CMR 4.00.
- Administrative Penalty Regulations, 310 CMR 5.00.

These may be purchased at:

State House Bookstore
Room 116
Boston, MA 02133
617-727-2834

State House West Bookstore
436 Dwight Street
Springfield, MA 01103
413-784-1376



Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Air Quality Control

BWP AQ 08 Emission Control Plan (ECP) Application Completeness Checklist

- ☐ The DEP Transmittal Form is completed.
- ☐ All questions have been answered (N/A has been inserted where appropriate).
- ☐ A signature of the legally responsible official has been included even if an agent has been hired to complete the application. See definitions in 310 CMR 7.00.
- ☐ Two complete copies of the application are being transmitted for review to Air Quality Control at the appropriate DEP Regional Office.
- ☐ All information listed in Section C is included in the package as well as any additional information requested in the form.

To submit the application package:

- ☐ Checklist items have been completed.
- ☐ Send two copies of the application along with one copy of the DEP Transmittal Form to:

Department of Environmental Protection
_____ * Regional Office
Air Quality Control

*See "DEP Addresses and Phone Numbers" page included in this package.

- ☐ Send fee of:
\$1,530 for applications where only DEP approval is required;
\$18,155 for applications where DEP and EPA approval is required;
in the form of a check or money order made payable to Commonwealth of Massachusetts, along with one copy of the DEP Transmittal Form to:

Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211



Massachusetts Department of Environmental Protection

Addresses and Phone Numbers

DEP Boston
One Winter Street
Boston, MA 02108
Telephone: (617) 292-5500
Fax: (617) 556-1049
TDD: (617) 574-6868

William X. Wall Experiment Station
37 Shattuck Street
Lawrence, MA 01843
Fax: (978) 688-0352
Division of Environmental Analysis
Telephone: (978) 682-5237
Air Quality Surveillance
Telephone: (978) 975-1138

Office of Watershed
Management
627 Main Street
Worcester, MA 01608
Telephone: (508) 792-7470
Fax: (508) 839-3469

Millbury Training Center
Route 20 Millbury, MA 01527
Telephone: (508) 368-5600
Fax: (508) 755-9253
Residuals Sludge Management
Telephone: (508) 368-5606
WWT Operator Certification
Telephone: (508) 368-5698

DEP Western Region
436 Dwight Street
Suite 402
Springfield, MA 01103
Phone: (413) 784-1100
Fax: (413) 784-1149



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Alford
Amherst
Ashfield
Becket
Belchertown
Bernardston
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Brimfield
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Granby
Granville
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627 Main Street
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Fax: (508) 792-7621
TDD: (508) 767-2788



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Stow
Sturbridge
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Upton

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Warren
Webster
Westborough
West Boylston
West Brookfield
Westford
Westminster
Winchendon
Worcester

DEP Southeast Region
20 Riverside Drive
Lakeville, MA 02347
Phone: (508) 946-2700
Fax: (508) 947-6557
TDD: (508) 946-2795



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Scituate
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Sharon
Somerset
Stoughton
Swansea
Taunton

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Truro
Wareham
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Westport
West Tisbury
Whitman
Wrentham
Yarmouth

DEP Northeast Region
1 Winter Street
Boston, MA 02108
Phone: 617-654-6500



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Newburyport
Newton
Norfolk
North Andover
North Reading
Norwood
Peabody

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Randolph
Reading
Revere
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Rowley
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Saugus
Sherborn
Somerville
Stoneham
Sudbury
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Tewksbury
Topsfield

Wakefield
Walpole
Waltham
Watertown
Wayland
Wellesley
Wenham
West Newbury
Weston
Westwood
Weymouth
Wilmington
Winchester
Winthrop
Woburn



Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Air Quality

BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO)

Transmittal Number

Facility ID# (if known)

Important:
When filling out
forms on the
computer, use
only the tab key
to move your
cursor - do not
use the return
key.



A. Facility Information

1. Facility :

Facility Name

Street Address

City

State

Zip Code

2. Mailing address, if different from above:

Facility Name

Street Address

City

State

Zip Code

Telephone

Fax Number

B. Applicability {See Regulation 310 CMR 7.19(3)}

This form is to be used by the owner, leaser, operator or controller of a facility applicable to an emission or design standard contained in 310 CMR 7.19. This completed form and necessary documentation will serve as the Emission Control Plan (ECP) submittal required by 310 CMR 7.19(3). You are advised to obtain a copy of the regulations for details on standards and ECP Submittal Requirements.

C. Additional Items

In addition to completion of this form, the following items must also be included, when applicable, to satisfy the requirements of a complete application.

☐ Manufacturer's Specifications and Brochures for Process Equipment, Add-on Air Pollution Control Equipment, Fans/Blowers, etc.

☐ Schematic Process Diagram – Dimensional plan showing process equipment, hoods, duct work, dampers, fans, temperature/pressure sensing devices, other monitors, air pollution control equipment, and all vents, by-passes or discharges to the atmosphere.

☐ Supplemental Forms for Add-on Pollution Control Equipment, if applicable

☐ Calculations – Detailed calculation sheets showing the manner in which pertinent quantitative data, including emission calculations, were determined.



BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number _____

Facility ID# (if known) _____

D. Equipment Description

Complete for any piece of equipment at the facility which emits NO_x (use additional pages if necessary)

	Unit 1	Unit 2	Unit 3
1. Equipment/process line ID#	_____	_____	_____
2. a. Is unit subject to a NO _x RACT?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
b. If yes, which regulations (see section N)	_____	_____	_____
3. Type of equipment: (boiler oven, turbine, diesel, etc.)	_____	_____	_____
4. Manufacturer:	_____	_____	_____
5. Model Number	_____	_____	_____
6. a. Maximum energy input capacity: (MMBTU/HR)	_____	_____	_____
b. For internal combustion engines only: energy conversion efficiency of unit (10 ⁶ BTU/brake hp-hr)	_____	_____	_____
7. Date of installation:	_____	_____	_____
8. Modifications since installation:	_____	_____	_____
a. type of modification:	_____	_____	_____
b. date of modification:	_____	_____	_____
9. DEP Air Quality Approvals (if any):	_____	_____	_____
a. Approval Number	_____	_____	_____
b. Date of Approval:	_____	_____	_____
c. Modifications to Approval: (date and approval number)	_____	_____	_____



BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number _____

Facility ID# (if known) _____

E. Fuel Data

	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>
1. Primary Fuel:	_____	_____	_____
a. type and grade:	_____	_____	_____
b. sulfur content (% by weight)	_____	_____	_____
c. gross heating value	_____	_____	_____
d. nitrogen content (% by weight)	_____	_____	_____
2. Secondary, standby or auxiliary fuel:			
a. type and grade:	_____	_____	_____
b. sulfur content (% by weight)	_____	_____	_____
c. gross heating value:	_____	_____	_____
d. nitrogen content (% by weight)	_____	_____	_____
3. Historical fuel usage:			

Provide the following information on usage of primary and auxiliary fuel use in each of the last two years. (Indicate year and gallons per year, pounds per year, cubic feet per year, etc.):

a. last year: ()			
(i) primary fuel	_____	_____	_____
(ii) secondary fuel	_____	_____	_____
b. year previous to last year ()			
(i) primary fuel	_____	_____	_____
(ii) secondary fuel	_____	_____	_____



BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number _____

Facility ID# (if known) _____

F. Burner Data

Complete for each piece of equipment at the facility which emits NO_x (use additional pages if necessary).

	Unit 1	Unit 2	Unit 3
1. Burner Manufacturer	_____	_____	_____
2. Model Number	_____	_____	_____
3. Type of Burner	_____	_____	_____
4. Date of Installation	_____	_____	_____
5. Number of Burners in Each Combustion Unit	_____	_____	_____
6. Maximum Fuel Firing Rate (all burners firing): (indicate gal/hr, lbs/hr, cubic feet/hr, etc.)	_____	_____	_____

G. NO_x Emission Rates and Standards

1. Indicate NO_x emission rate for each fuel combusted, in each unit, as the units currently operate (i.e., before modification to meet RACT standard):

NO _x emission rate (indicate rate and units):	Unit 1	Unit 2	Unit 3
a. primary fuel	_____	_____	_____
b. secondary fuel	_____	_____	_____

2. Indicate NO_x emission RACT standard for each fuel combusted in each unit. Emission standards are contained in the regulations (310 CMR 7.19). If applying for an alternative RACT or not subject to one of the categories of 7.19, enter the alternative/RACT. If the unit is not subject to any NO_x RACT standard, enter the same value as indicated in item #1 above:

NO _x emission rate (indicate rate and units):	Unit 1	Unit 2	Unit 3
a. primary fuel	_____	_____	_____
b. secondary fuel	_____	_____	_____

3. Is additional documentation included for any Large Boilers (100,000,000 BTU/hr) applying for an alternate RACT as allowed in 7.19(4)(c)?

☐ Yes ☐ Not applying for alternative large boiler RACT



BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number

Facility ID# (if known)

G. NO_x Emission Rates and Standards (cont.)

4. If a unit is subject to 7.19(12), miscellaneous RACT, or is applying for an alternative RACT, is additional material included in this application as required by 310 CMR 7.19(3)(d), including:
- a demonstration and description of the RACT emission standard(s) proposed for this facility?
- ☐ Yes ☐ Not applying for miscellaneous nor alternative RACT
- b. information necessary to support the demonstration, such as technological and economic considerations, etc.?
- ☐ Yes ☐ Not applying for miscellaneous nor alternative RACT
5. If a unit will utilize seasonal fuel switching {7.19(2)(f)} is documentation on the calculation of emission standard included?
- ☐ Yes ☐ Not utilizing season fuel switching
6. Will there be cofiring of fuels {7.19(15)}, i.e. more than one fuel burned simultaneously, in combination, or in any one day?
- ☐ Yes ☐ No

H. Potential Emissions (optional section)

Potential Emissions are used to determine applicability to air pollution control regulations and compliance fees. Unless otherwise restricted, potential emissions are calculated from the maximum operational capacity of the equipment as described in previous section D operated 8,760 hours per year. If you wish to limit potential emissions for the entire facility you must complete this section; this will be treated as part of the facility design and the limitation will be specifically stated in this Emission Control Plan Approval. This is not required as part of the Emission Control Plan.

1. Do you wish to limit potential emissions?
- ☐ Yes ☐ No If no, proceed to section I. If yes, complete sections 2 and 3.
2. In order to issue a permit limiting the facility's potential emissions, the Department must have a method to monitor compliance with the restriction. In other words, an enforceable permit condition must be available to the Department. The following questions require the facility to set a limit on the maximum amount of fuel combusted (per month and per year) and therefore, the amount of emissions possible. This will become the means to monitor and enforce the restriction. Alternative methods of restricting potential emissions will be evaluated on a case-by-case basis and the applicant should contact the Department before proposing such alternatives. Any such alternative method must be consistent with the U.S. EPA's June 13, 1989 guidance entitled "Guidance on Limiting Potential to Emit in New Source Permitting". (Copies of this guidance are available from DEP offices).

Note: this should be completed for ALL NO_x emitting processes at the facility, not only those subject to RACT

a. Fuel restriction:

Enter amount of fuel and units (gallons, cubic feet, etc.). This usage will become the facility's allowable usage. This amount can never be exceeded without prior Department approval.



Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Air Quality

BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number _____

Facility ID# (if known) _____

H. Potential Emissions (cont.)

	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>	<u>Total</u>
i. maximum per month:				
amount primary fuel	_____	_____	_____	_____
amount secondary fuel	_____	_____	_____	_____
ii. maximum per year:				
amount primary fuel	_____	_____	_____	_____
amount secondary fuel	_____	_____	_____	_____

b. Describe any other physical or operational limitations on the capacity of the equipment to emit a pollutant, including air pollution control equipment, restriction on hours of operation, or on the type or amount of material combusted, stored or processed that will be used to restrict emissions:

3. Emissions from proposed fuel restriction:

Calculate emissions that will result from the restrictions as described in items #1 and #2 above. Use emission standards as described in Section G for units subject to NO_x. For units without an emission standard stated in Section G above (i.e. not subject to RACT), use best available data from your existing air permit, Department-accepted stack tests, or CEM data. If no data exists, use the factors* provided below.

NO _x emissions (tons):	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>	<u>Total</u>
a. maximum per month:				
primary fuel	_____	_____	_____	_____
secondary fuel	_____	_____	_____	_____
b. maximum per year:				
primary fuel	_____	_____	_____	_____
secondary fuel	_____	_____	_____	_____



BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number

Facility ID# (if known)

H. Potential Emissions (cont.)

Emissions Factors, NO_x:

Boilers:

67 lbs of NO_x for every 1000 gallons of oil burned in Boilers > 100 MMBtu/hr

55 lbs of NO_x for every 1000 gallons of oil burned in Boilers 0.5 to 100 MMBtu/hr using Residual Fuels (#6, #5, #4)

20 lbs of NO_x for every 1000 gallons of oil burned in Boilers 0.5 to 100 MMBtu/hr using Distillate fuels (#2, #1)

18 lbs of NO_x for every 1000 gallons of oil burned in Boilers less than 0.5 MMBtu/hr using Distillate fuels (#2, #1)

550 lbs of NO_x for every 1,000,000 cubic feet of gas burned in Boilers > 100 MMBtu/hr

140 lbs of NO_x for every 1,000,000 cubic feet of gas burned in Boilers between 10 and 100 MMBtu/hr

100 lbs of NO_x for every 1,000,000 cubic feet of gas burned in Boilers less than 10 MMBtu/hr

Diesel engines, turbines and other combustion equipment, NO_x calculated from equipment manufacturers specifications. The Department reserves the right to require testing of fuel for nitrogen content and/or stack and CEM testing.

I. RACT Strategy

1. Provide details on how the facility plans to meet the limits in the regulations (new equipment, alternative fuels, add-on controls, combustion modifications, etc.)

2. Which, if any, of the units will be shut down as a result?



BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number

Facility ID# (if known)

I. RACT Strategy (cont.)

3. Will compliance be achieved through the averaging of units? ☐ Yes ☐ No

If yes, the averaging must conform to the requirements and limitations of 7.19(14) and 7.00 appendix B(4). Describe in detail the methods for measuring such compliance, below and in Section K, record keeping:

4. Will the facility use and Air Pollution Control Device to reduce NO_x emissions and comply with the standards? ☐ Yes ☐ No

If yes, attach additional specifications and the appropriate Supplemental BWP form for air pollution control equipment. Indicate equipment and form used:

5. Will the facility be installing new equipment to comply with the standards? ☐ Yes ☐ No

If yes, the appropriate plans application form, BWP AQ 01,02 or 03 must be completed for the new equipment.

J. Compliance Implementation

Provide a schedule for implementation of changes necessary to comply with the RACT standard. Include the following dates, at a minimum:

Purchase of air pollution control equipment
Delivery of air pollution control equipment
Installation of air pollution control equipment
Start-up of air pollution control equipment
Compliance testing of air pollution control equipment.

Purchase of new equipment
Delivery of new equipment
Installation of new equipment
Start-up of new equipment
Compliance testing of new process equipment

Identification of necessary modifications
Modification of equipment

Purchase of monitoring equipment
Delivery of monitoring equipment
Installation of monitoring equipment
Start-up of monitoring equipment
Testing of monitoring equipment



BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number _____

Facility ID# (if known) _____

K. Record Keeping/Monitoring

Note:
Records kept to demonstrate compliance shall be kept on site for five years and shall be made available to representatives of the Department and the EPA upon request.

Describe record keeping procedures and any process monitoring equipment (temperatures, flow meters) including CEMS that will be used by the facility to demonstrate continuous compliance.

L. Testing

Testing may be required by the Department. Describe those design considerations incorporated into the equipment to allow for emission testing (stack test port locations, equipment enclosures, etc.)

M. Certification

This form must be signed by the owner or by a responsible company official working at the location of the source. Even if an agent has been designated to fill out this form, the owner or responsible officer must sign it.

Certification:

"I certify that I have examined the above and that to the best of my knowledge it is true and complete. (Signature subjects signer to the provisions of the General Statutes regarding false and misleading statements)."

Signature _____

Title _____

Representing _____

Date _____



BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP):
Oxides of Nitrogen (NO_x)

Transmittal Number

Facility ID# (if known)

N. Regulation Description

All ratings are based on energy input to the units and the HHV (High Heating Value) of the fuel(s) used.

Regulation	Description
7.19(4)	Large Boilers (≥ 100,000,000 BTU/hr)
7.19(5)	Medium Boilers (≥ 50,000,000 BTU/hr but < 100,000,000 BTU/hr)
7.19(7)	Stationary combustion turbines
7.19(8)	Stationary Reciprocating Internal Combustion Engines (≥ 3,000,000 BTU/hr)
7.19(9)	Incinerators
7.19(10)	(Reserved)
7.19(11)	Glass Melting Furnaces (≥ 14 tons per day of glass produced)
7.19(12)	Miscellaneous (potential emissions ≥ 25 tons per year NO _x)



Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Air Quality

BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number

Facility ID# (if known)

Important:
When filling out
forms on the
computer, use
only the tab key
to move your
cursor - do not
use the return
key.



A. Facility Information

1. Facility:

Name

Street Address

City

State

Zip Code

2. Mailing address, if different from above:

Name

Street Address

City

State

Zip Code

Telephone Number

Fax Number

B. Applicability {See Regulations 310 CMR 7.18(20)}

This form is to be used by the owner, leaser, operator or controller of a facility applicable to an emission or design standard contained in 310 CMR 7.18. This completed form and necessary documentation will serve as the Emission Control Plan (ECP) submittal required by 310 CMR 7.18(20). You are advised to obtain a copy of the regulations for details on standards and ECP submittal requirements.

C. Additional Items

☐ Manufacturer's Specifications and Brochures for Process Equipment, Add-on Air Pollution Control Equipment, Fans/Blowers, etc.

☐ Supplemental Forms for Add-on Air Pollution Control Equipment, if applicable

☐ Supplemental Forms Volatile Organic Compound (VOC) usage (BWP AQ SFP-1)

☐ Calculations – Detailed calculation sheets showing the manner in which pertinent quantitative data, including emission calculations, were determined.

☐ Schematic Process Diagram – Dimensional plan showing process equipment, hoods, duct work, dampers, fans, temperature / pressure sensing devices, other monitors, air pollution control equipment, and all vents, by-passes or discharges to the atmosphere.



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number

Facility ID# (if known)

D. What Constitutes a VOC Emission

A Volatile Organic Compound is any compound of carbon which participates in atmospheric photochemical reactions. For the purposes of determining compliance, VOC is measured by the applicable reference test methods specified under 40 CFR 60. This definition includes all organic compounds except the following:

- carbon monoxide
- carbon dioxide
- carbonic acid
- metallic carbides or carbonates
- ammonium carbonate
- methane
- ethane
- methyl chloroform (1,1,1- Trichloroethane)
- freon 113 (Trichlorotrifluoroethane)
- HCFC-123 (2,2-dichloro-1,1,1-trichloroethane)
- HCFC-134a (1,1,2,2-tetrafluoroethane)
- HCFC-141b (1,1-dichloro-1-fluoroethane)
- HCFC-142b (1-chloro-1,1-difluoroethane)
- HCFC-124 (2-chloro-1,1,1,2-tetrafluoroethane)
- HFC-125 (pentafluoroethane)
- HFC-134 (1,1,2,2-tetrafluoroethane)
- HFC-143a (1,1,1-trifluoroethane)
- HFC-152a (1,1-difluoroethane)
- Cyclic, branched, or linear, completely fluorinated alkanes
- Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations
- Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
- Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

Note: The following seven compounds are considered equivalent to VOC for purposes of this form and 310 CMR 7.18, inclusive. They must be included in any VOC emission calculation contained in this plan although they are not considered photochemically reactive:

- methylene chloride (dichloromethane);
- CFC-11 (trichlorotrifluoromethane);
- CFC-12 (dichlorodifluoromethane);
- CFC-22 (chlorodifluoromethane);
- FC-23 (trifluoromethane);
- CFC-114 (dichlorotetrafluoroethane);
- CFC-115 (chloropentafluoroethane)



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number _____

Facility ID# (if known) _____

E. Equipment Description

Complete for each piece of equipment at the facility with the potential to emit VOC (use additional pages if necessary):

	Unit 1	Unit 2	Unit 2
1. Equipment/Process Line I.D.#	_____	_____	_____
2. Was this piece of equipment/line subject to VOC RACT standard listed in section M on or before January 1, 1992?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Has this piece of equipment/line become subject to VOC RACT standard listed in Section M after January 1, 1992?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Type of Equipment/Line (Coater, Paint Spray Booth, Degreaser, etc.)	_____	_____	_____
5. Manufacturer	_____	_____	_____
6. Model Number	_____	_____	_____
7. Date of Installation	_____	_____	_____
8. Modifications Since Installation			
a. Type of Modification	_____	_____	_____
b. Date of Modification	_____	_____	_____
9. DEP Air Quality Approvals (if any)			
a. Approval Number	_____	_____	_____
b. Date of Approval	_____	_____	_____
c. Modifications to Approval (Date and Approval Number)	_____	_____	_____
10. Applicable section of 310 CMR 7.18 (see list in section M)	_____	_____	_____
11. Maximum Capacity of Equipment	_____	_____	_____
a. Maximum Production Rate (lbs/hr, feet/min, etc.)	_____	_____	_____
b. Maximum Usage Rate of VOC containing compound (gal/hr, lbs/hr)	_____	_____	_____



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number _____

Facility ID# (if known) _____

E. Equipment Description (cont.)

	Unit 1	Unit 2	Unit 3
12. Process Temperature (range)	_____	_____	_____
13. Process Pressure (range)	_____	_____	_____
14. Description/Chemical Identity of:			
a. Raw Materials Used in the Process	_____	_____	_____
b. Finished materials.	_____	_____	_____

F. Emissions Before Implementation of RACT

Complete this section only for each piece of equipment currently at the facility identified as subject to the RACT requirement after January 1, 1992, (Section E, item #3)

a. List each raw material containing VOC currently used in each piece of equipment (attach additional pages if necessary). Include coatings, thinners, cleaners, process chemicals, etc.:

Equipment/Process line I.D. #	Identity of raw material containing VOC	Percent VOC by weight (lbs. VOC/lb material)	Actual amount of raw material used per year (see item b for year of record)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number _____

Facility ID# (if known) _____

F. Emissions Before Implementation of RACT (cont.)

b. Calculate ACTUAL EMISSIONS on a daily and annual basis from each piece of equipment subject to VOC RACT after January 1, 1992, and listed in part a above. ACTUAL EMISSIONS, for this application, are the greatest amount of VOC emitted in any year since the 1990 calendar year, inclusive. This reported amount must be supported by records available for Department inspection. Refer to the calculation method and attach all calculations to this application.

	Unit 1	Unit 2	Unit 3
VOC per day (lbs.)	_____	_____	_____
VOC per year (tons)	_____	_____	_____

c. Calculate POTENTIAL EMISSIONS (the maximum amount that could be emitted) for the same equipment listed in parts a and b, based on operation at full capacity. Refer to the calculation method and attach all calculations to this application.

In calculating POTENTIAL EMISSIONS use 100 percent of equipment rated capacity (as identified in section E, item 11b) and operation of equipment for 8,760 hours per year unless:

- 1) the equipment has a permit that restricts production rate, operating hours or other items that will have an effect of limiting potential to emit; or
- 2) the facility is currently subject to an emission standard or control requirement set forth in a state or federal regulation.

	Unit 1	Unit 2	Unit 3
VOC per day (lbs.)	_____	_____	_____
VOC per year (tons)	_____	_____	_____

$$\left[\begin{array}{l} \text{Amount of VOC} \\ \text{containing compounds} \\ \text{used (gallons)} \end{array} \right] \times \left[\begin{array}{l} \text{Density of} \\ \text{compound} \\ \text{(lbs/gal)} \end{array} \right] \times \left[\begin{array}{l} \text{Percent VOC in} \\ \text{compound (by} \\ \text{weight)/100} \end{array} \right] = \text{VOC emitted (lbs)}$$



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number

Facility ID# (if known)

F. Emissions Before Implementation of RACT (cont.)

Example:

A facility uses 100 gallons of paint that is 75 percent by weight VOC and weighs 8 pounds per gallon. A ventilation system captures 90 percent of the emissions and an afterburner controls 95 percent of the captured VOC that is vented to it.

Amount released: $100 \text{ gals} \times 8.0 \text{ lb/gal} \times 75 \text{ percent VOC}/100 = 600 \text{ lbs}$ emitted from the process.

Amount controlled: $600 \text{ lbs} \times 90 \text{ percent capture}/100 \times 95 \text{ percent control}/100 = 513 \text{ lbs}$.

Amount emitted to air: $600 \text{ lbs} - 513 \text{ lbs} = 87 \text{ lbs}$

G. RACT Strategy

1. Provide details on how the facility plans to meet the limits in the regulations (new processes, reformulated coatings, alternative materials, add-on air pollution control equipment, etc.).

2. Which, if any, of the VOC containing materials will be reformulated to comply with the standard?

For each coating or coating formulation complete and attach supplemental form BWP AQ SFP-1.

3. Will compliance be achieved through a daily weighted average of coatings used on individual coating machines? ☐ Yes ☐ No



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number _____

Facility ID# (if known) _____

G. RACT Strategy (cont.)

If yes, the averaging must conform to the requirements and limitations of 7.18(2)(b). Describe in detail the methods for measuring such compliance, below and in section K, recordkeeping:

4. Will the facility use an Air Pollution Control Device to reduce VOC emissions and comply with the standards? ☐ Yes ☐ No

If yes, complete and attach the appropriate Supplemental BWP form for air pollution control equipment. Indicate equipment and form used:

5. Will the facility be installing new equipment or modifying existing equipment to comply with the standards? ☐ Yes ☐ No

If yes, attach additional information for the new equipment including manufacturers brochures and equipment drawings/plans. Also complete and attach form BWP AQ CPA-3.

Note: If the installation of new equipment will result in an increase in the facility's production capacity then the facility may be required to obtain an approval under the permit approval regulations (310 CMR 7.02) instead of RACT. Approval under 7.02 would require submittal of form BWP AQ CPA-3 and related forms. In such cases, contact the regional DEP Air Quality Control office before applying for approvals or Emission Control Plans.

H. Potential Emissions After Implementation of RACT (optional section)

Potential Emissions are used to determine applicability to air pollution control regulations and compliance fees. Unless otherwise restricted, potential emissions are calculated from the maximum operational capacity of the equipment as described in section E operated 8,760 hours per year. If you wish to limit potential emissions for the entire facility you must complete this section; this will be treated as part of the facility design and the limitation will be specifically stated in this Plan Approval. This is not required as part of the Emission Control Plan.

1. Do you wish to limit Potential Emissions? ☐ Yes ☐ No

If no, proceed to section I. If yes, complete sections 2 and 3.



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number

Facility ID# (if known)

H. Potential Emissions After Implementation of RACT (optional section)

2. In order to issue a permit limiting the facility's potential emissions, the Department must have a method to monitor compliance with the restriction. In other words, an enforceable permit condition must be available to the Department. The following questions require the facility to set a limit on the maximum amount of raw materials used (per month and per year) and therefore, the maximum amount of emissions possible. This will become the means to monitor and enforce the restriction. Alternative methods of restricting potential emissions will be evaluated on a case-by-case basis and the applicant should contact the Department before proposing such alternatives. Any such alternative method must be consistent with the U.S. EPA's June 13, 1989 guidance entitled, "Guidance on Limiting Potential to Emit in New Sources Permitting". (Copies of this guidance are available from DEP offices).

Note: this should be completed for ALL VOC emitting processes at the facility, not only those subject to RACT.

VOC Containing Raw Material to be Used*	Amount Used in Equipment 1		Amount Used in Equipment 2		Amount Used in Equipment 3		Total Used	
	<u>Per Month</u>	<u>Per Year</u>	<u>Per Month</u>	<u>Per Year</u>	<u>Per Month</u>	<u>Per Year</u>	<u>Per Month</u>	<u>Per Year</u>
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

*Form BWP AQ SFP-1 must be completed for
each material

Use additional paper if necessary

3. Describe any other physical or operational limitation on the capacity of the equipment to emit a pollutant, including air pollution control equipment, restriction on hours of operation, or on the type or amount of material combusted, stored or processed that will be used to restrict emissions:



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number

Facility ID# (if known)

I. Compliance Implementation

Provide a schedule for implementation of changes indicated in Section G necessary to comply with the RACT standard. Include the following dates, at a minimum, where applicable:

Purchase of air pollution control equipment.
Delivery of air pollution control equipment.
Installation of air pollution control equipment.
Start-up of air pollution control equipment.
Compliance testing of air pollution control equipment.

Purchase of new process equipment.
Delivery of new process equipment.
Installation of new process equipment.
Start-up of new process equipment.
Compliance testing of new process equipment (if required by DEP).

Identification of reformulated coatings.
Compliance testing of reformulated coatings.
Initial production testing of reformulated coatings.
Production line testing of reformulated coatings.
Final acceptance and use of reformulated coatings.

J. Miscellaneous

1. If the facility is subject to 7.18(17), Non-category RACT, the following additional material must be included in this application as required by 310 CMR 7.18(20)(d):
 - a. A demonstration and description of the RACT emission limit(s) proposed for this facility
☐ Included ☐ Project not applicable to 7.18(17)
 - b. Information necessary to support the limit, such as technological and economic considerations, industry surveys, customer considerations, etc.
☐ Included ☐ Project not applicable to 7.18(17)
 - c. Describe any other information included:

2. Is the facility applying for an extension of the compliance deadlines? ☐ Yes ☐ No

If yes, is additional information, as required by the specific subpart regulation, included?

☐ Included. ☐ Not applying for an extension

Proposed Date of Final Compliance



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number

Facility ID# (if known)

K. Recordkeeping/Monitoring

Describe recordkeeping procedures and any process monitoring equipment (temperatures, flow meters) that will be used by the facility to demonstrate continuous compliance:

Records kept to demonstrate compliance shall be kept on-site for three years and shall be made available to representatives of the Department and the EPA upon request. Such records shall include, but are not limited to:

1. identity, quantity, formulation and density of raw materials used;
2. identity, quantity, formulation and density of any diluent(s) and clean-up solvent(s) used;
3. solids content of any raw materials used;
4. actual operational and emissions characteristics of the equipment line and any appurtenant emissions capture and control equipment;
5. quantity of product processed;
6. any other requirements specified by the Department in any approval(s) issued under this ECP or any order(s) issued to the person

L. Testing

Testing may be required by the Department. Describe those design considerations incorporated into the equipment to allow for emission testing (stack test port locations, equipment enclosures, etc.).



BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number

Facility ID# (if known)

M. RACT Categories

Category	Applicability	Date by which the Facility has to be in compliance
7.18(3) Metal Furniture Surface Coating	Actual Emissions > 15 lbs/day	1/1/80
7.18(4) Metal Can Surface Coating	Actual Emissions > 15 lbs/day	1/1/80
7.18(5) Large Appliance Surface Coating	Actual Emissions > 15 lbs/day	1/1/80
7.18(6) Magnet Wire Insulation Surface Coating	Actual Emissions > 15 lbs/day	1/1/80
7.18(7) Automobile Surface Coating	Actual Emissions > 15 lbs/day	1/31/82*
7.18(8) Solvent Metal Degreasing	All Units	12/31/80
7.18(10)	Actual Emissions > 15 lbs/day	7/1/80
7.18(11) Surface Coating of Miscellaneous Metal Parts and Products	Actual Emissions 10 TPY	12/31/82
7.18(12) Graphic Arts	Potential Emissions > 100 TPY	12/31/82
7.18(14) Paper Surface Coating	Actual Emissions > 15 lbs/day	12/31/82
7.18(15) Fabric Surface Coating	Actual Emissions > 15 lbs/day	12/31/82
7.18(16) Vinyl Surface Coating	Actual Emissions > 15 lbs/day	12/31/82
7.18(17) Reasonable Available Control Technology (Non-category specific)	Potential Emissions 100 TPY	12/31/82
	Potential Emissions 50 but < 100 TPY w/ actual emissions > 50 TPY	1/1/94
	Potential Emissions 50 but < 100 TPY w/ actual emissions 50 TPY	5/31/95
7.18(18) Poly styrene Resin Manufacture	Actual Emissions > 15 lbs/day	12/31/86
7.18(19) Synthetic Organic Chemical Manufacture	All Facilities	Any Facility
7.18(21) Surface Coating of Plastic Parts	Potential Emissions 50 TPY	1/1/94
7.18(22) Leather Surface Coating	Potential Emissions 50 TPY	1/1/94
7.18(23) Wood Products Surface Coating	Potential Emissions 50 TPY	1/1/94



Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Air Quality

BWP AQ 08-B

Application for Approval of Emission Control Plan (ECP);
Volatile Organic Compounds (VOC)

Transmittal Number

Facility ID# (if known)

M. RACT Categories (cont.)

7.18(24) Flat Wood Paneling Surface Coating	Actual Emissions > 15 lbs/day	1/1/94
7.18(25) Lithographic Printing	Potential Emissions 50 TPY	1/1/94
7.18(26) Textile Finishing	Potential Emissions 50 TPY	1/1/94
7.18(27) Coating Mixing Tanks	Actual Emissions > 15 lbs/day	1/1/94
7.18(28) Automotive Refinishing	All Facilities	8/1/95
7.18(29) Bakeries	Potential Emissions 50 TPY	8/31/95

N. Certification

This form must be signed by the owner or by a responsible company official working at the location of the source. Even if an agent has been designated to fill out this form, the owner or responsible officer must sign it.

"I certify that I have examined the above and that to the best of my knowledge it is true and complete." (Signature subjects signer to the provisions of the General Statutes regarding false and misleading statements.)

Print Name

Date

Authorized Signature

Position/Title

Representing